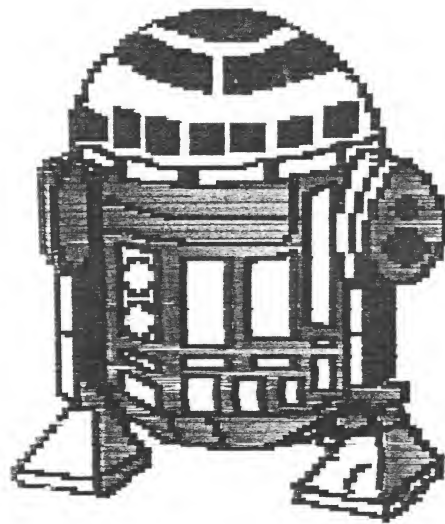# Atari 1020 Color Printer
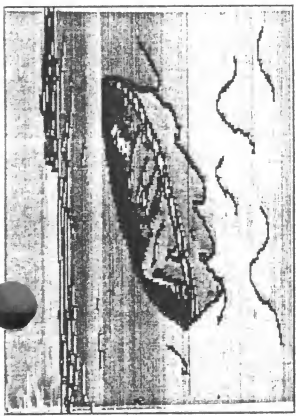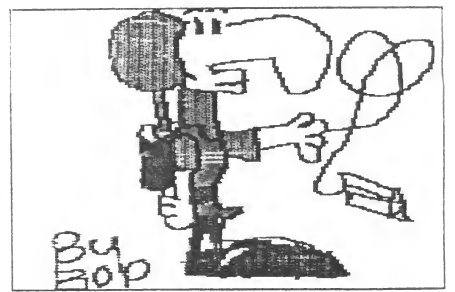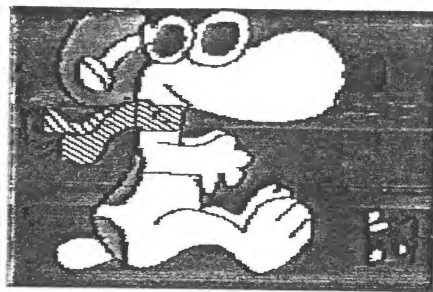# Screen Print Software

Written exclusively for Atari
by
Robert Wilson
and
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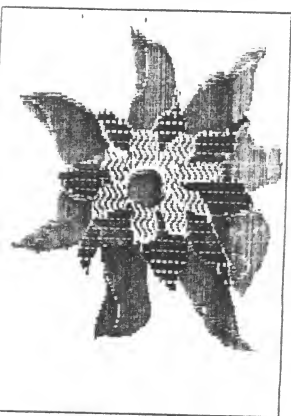
Screen Print Software

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INTRODUCTION

Atari Screen Print Software is an extremely useful graphics program that allows you to transfer color screens created by any Atari graphics creation program and hardware to the Atari 1020 color plotter.

Screen Print can accept, display and draw on the plotter, disk files created with the following programs:

-Atari Artist. This is the drawing program that accompanies the Atari Touch Tablet.

-Atari Graphics. This is the software cartridge that accompanies the Atari Light Pen.

-Atari Paint. Files created with this program can be loaded directly by Screen Print.

-Atari World (from APX). This program creates standard Graphics mode 8 screens, and thus Screen Print can load any hi-res screen saved in this mode.

EQUIPMENT REQUIREMENTS

Screen Print is designed to work with any 48K minimum Atari computer system including models 400, 800, 1200XL, 600XL, 800XL and 1450XLD. Also required is a disk drive, either model 810 or 1050 and an Atari 1020 color plotter.

ABOUT Screen Print

Before using Screen Print you should be aware of some if its capabilities and limitations. It will allow you to load any file created by one of the Atari graphics programs noted above as well as other compatible files.

Though the program runs very quickly, the 1020 plotter is a mechanical device and thus is the limiting factor in terms of how long it will take to get your screen image on paper.

How long will a screen-plot take? This is hard to answer, as there are many variables. Plots from Graphics mode 8 will usually be faster than those from the four color mode used in the Light Pen or Touch Tablet, simply because only one color is used, rather than as many as four. On the other hand, the complexity of the picture (amount of detail) is a major consideration. The more picture detail, the longer the plotting time.

The program provides two sizes of screen-plots; Small and Large. Which size you choose will play a large part as well in determining the length of time required for a screen-plot. Small plots will typically take as little as 1/6th the time of the same plot in the Large size. This means that if a Small plot takes, say, 5 minutes, you can anticipate that a large one will take about half an hour.

To directly answer the question though; a Small plot with a moderate amount of detail, could take as little as 3 minutes. A Large plot of a detailed four color screen might take as much as 3 hours! One consolation is that the process is completely automatic once you have answered a few questions. Thus, the computer and plotter can be left by themselves until finished.

GETTING STARTED

First, remove the BASIC cartrige (models 400, 800 and 1200XL only). Now turn on your disk drive and plotter. Insert the Screen Print disk into the drive and then turn on your computer. The program will start to load and after about 30 seconds the title screen will appear. A few seconds later the main menu will be displayed. If you have not turned your plotter on you will see a message to that effect. In that event, turn the 1020 on and then press any key to proceed.

THE MAIN FUNCTION MENU

This screen contains selections for all of Screen Print's major functions. What are the choices and what they do?

1 Load an Atari Touch Tablet Picture

Selecting this choice allows you to load a file created with the Atari Touch Tablet and the Atari Artist software. Files generated by compatible programs may also be loaded with this selection.

2 Load an Atari Light Pen Picture

This allows you to load a previously saved picture that was created with the Atari Light Pen and Atari Graphics cartridge program. Compatible files created with other programs that generate a Graphics 7.5 (Antic mode E) image may also be loaded with this selection.

3 Load an Atari Paint Picture

This choice allows the loading of files generated with the Atari Paint program.

4 Load an Atari World Picture

This selection will load files created with the Atari World program from APX, or any standard Graphics mode 8 screen file.

5 Redisplay a Picture

As noted at the bottom of the main Function Menu screen, pressing OPTION at any time while a picture is being displayed will return you to this menu. You may then Redisplay the picture once again by choosing this selection. The picture is never lost until another one is loaded or the computer turned off.

6 Plot a Current Picture

By pressing this selection you will proceed to a series of questions regarding pen selections for plotting. If you make an error in selection, you may press ESC at any time to return to the menu. After those questions are answered, the contents of the picture screen will be drawn on the Atari 1020 Color Plotter. These questions will be explained in the next section of this manual.

7 Overlay Plot

The program provides this alternative to #6 above, so that you can superimpose one screen-plot on top of another. Many creative opportunities are possible with this option. When selected the usual pen selection questions will be asked, but the paper won't be advanced before the plot is started. Thus, one picture can be drawn on top of another. Only use this selection for special effects.

S Small Picture Chosen

This line indicates that when you proceed to Plot the screen by choosing #6, the plotted size will be the smaller of the two sizes available. Pressing S for Size will alternatively display the line....

Large Picture Chosen

Pressing S acts as a "toggle switch" and will alternate between Large and Small. The default is the Small size, but whichever you select remains in effect until you change it again. Note that the Small size will plot about six times more quickly than the Large. The Small plot is approximately 1.5 by 2 inches. The Large size gives a graph approximately 4.5 by 6 inches on a side.

WHEN EXPERIMENTING TO SEE HOW ANY GIVEN SCREEN WILL LOOK ON PAPER, IT'S WISE TO USE THE SMALL SIZE. THIS SAVES TIME, PENS AND PAPER.

A Screen Ratio Chosen

This final option is to choose the Aspect ratio of the plotted picture; in other words whether or not you wish standard Screen aspect ratio, or Plotter aspect ratio. To understand what this means, have a close look at the pixels or dots that make up a TV screen image. A magnifying glass will help. You'll see that the dots are somewhat higher than they are wide.

Screen Print offers you the choice of plotting the screen image with the pixels similarly proportioned or approximatley the same height and width as on screen.

By selection <u>Screen</u> ratio Screen Print will produce an almost exact representation of the screen, and your plotter dumps will reflect the proportions as displayed on-screen. On the other hand, if you select <u>Plotter</u> Aspect Ratio, the program will compensate for the difference between the height and width of the screen pixels. The choice is yours. You may find that selecting the <u>Screen</u> ratio (default), is preferable if you do not have any perfect geometric shapes on screen, or if you have designed your drawing carefully a pixel at a time. This selection is toggled between the two choices by pressing <u>A</u> and as with the <u>Size</u>, remains as selected unless changed.

LOADING <u>A</u> <u>PICTURE</u> <u>FILE</u>

Let's load a picture to see how all of this works. On the Screen Print disk you will find a sample picture file which we will now use. We will start by loading this very impressive picture called CITY.PIC. This is an Atari Touch Tablet file. (CITY.PIC was created by Ian Chadwick, author of "Mapping the Atari", and an accomplished computer graphics artist in his own right).

Press selection #2 on the Main Menu as this screen was created with the Atari Touch Tablet software. You will now be asked to name a file. The name of the file we want to load is CITY.PIC, but lets take a moment to see how this section of the program works.

If you arn't sure of the name of a file that you wish to load, simply press RETURN when asked for the file name. This will give you a directory of the names of all of the files on a disk. You will note that the Atari Artist software uses the 'convention' of naming all picture files with the extender .PIC.

Once you have seen the disk directory, simply press RETURN again and you will now be able to type in the desired file name. If for any reason you want to "back out" and return to the Function Menu, simply press the ESC key at this time. You may now select a different type of file in the event that you chose the wrong kind. See "Loading The Wrong Type of File" below.

Screen Print supports two drives and you can use any of the standard forms of naming a file. For example, CITY.PIC, D:CITY.PIC and D1:CITY.PIC will all be accepted as valid forms. Incidently, if you have a second drive, you can get a directory for that drive by pressing the number 2, then (RETURN) instead of just RETURN when requesting a directory.

Type in the name CITY.PIC now, and you will see this picture being loaded. If you recall, at the bottom of the main menu is printed the instruction that pressing OPTION will return to the main menu. Do so at this time.

Notice again that selection #5 allows you to Redisplay the picture. Press #5 now. As you can see, once a picture has been loaded you are able to perform other functions by returning to this menu, but are still able to redisplay the picture at any time. The only time you loose the currently displayed picture is when you load a new one or turn your computer off.

PLOTTING A PICTURE

With the main menu displayed and CITY.PIC loaded, press selection #6. Depending on the size of the plot chosen earlier, your plotter will now draw a rectangular outline the size of the image that will be plotted. This is done with the pen in position #1, usually the BLACK pen. (See "About Pens" now, for more information on pen selection).

You will now be asked a series of four questions. Most screens have four basic colors, though there may appear to be more due to the use of shading and cross-hatching. This is a fortunate coincidence since the 1020 plotter has four different colors available.

As noted at the bottom of the screen, you may press ESC to return to the main menu at any time. This is handy if you've selected the wrong pen in error. The program will draw another outline when you press #6 again, so you will either have to advance the paper or use #7 Overlay, to avoid this.

You are now told the color of the background of the picture and asked which pen you would like to use. Usually the background will be black, so selecting the BLACK pen will make sense.

IF THE PICTURE THAT YOU HAD LOADED WAS MOSTLY A BLACK BACKGROUND, WITH AREAS OF COLOR, IT MIGHT BE VERY TIME CONSUMING AND WASTEFULL OF INK TO HAVE THE PLOTTER DRAW A SOLID <u>BLACK</u> BACKGROUND. BECAUSE OF THIS THE PROGRAM GIVES YOU THE ABILITY TO CHOOSE TO LEAVE THE BACKGROUND <u>blank</u>, OR IN OTHER WORDS AS WHITE PAPER BY SIMPLY PRESSING <u>RETURN</u>. Examining the picture beforehand and deciding which color is most prominant and/or the background, will usually save time and you will end up with a more attractive plotted output. Due to pen limitations, large areas of solid color tend to appear uneven.

In the case of CITY.PIC choose pen #1-BLACK. This picture is somewhat deceiving as at first glance it appears that the background is white. It isn't. It's BLACK, but since we want the BLACK parts to be drawn we have selected pen #1. When we get to the WHITE parts, we will be leaving that part of the Plot blank by pressing RETURN instead of selecting a pen #. It is up to you to choose which screen color or colors to leave undrawn.

You will next be told the second color (RED) and you should choose pen #2 or whichever pen position is appropriate for RED. Next the third color (BLUE) will be indicated and you should choose pen #3. Finally the fourth color (WHITE) is indicated, and this time just press RETURN rather than selecting a pen number as discussed in the previous paragraph.

The plotter will now start. To produce this picture will take approximately 30 minutes. While your plotter is running, and so that you can keep an eye on its progress, take this opportunity to read the rest of this manual and learn about the other features of Screen Print.

RETURNING TO THE MAIN MENU

Once the screen-plot has completed the Main Function menu will be automatically redisplayed. If, for any reason, you wish to terminate a screen-plot early; before the plotter is done, simply press OPTION. The plotter will stop and you will now be able to load another picture or change to a different size or pen settings.

OPTION then has two main functions. Pressing it while a picture is simply being displayed will redisplay the main Function Menu. Pressing it while a Plot is being performed will also terminate that Plot. There is no way to resume a plot from the point at which it was interupted.

ABOUT PENS

Your Atari 1020 plotter uses four pens. The colors available are BLACK, BLUE, RED and GREEN. If you are doing a Graphics 8 plot, simply choose the pen color you wish for the single choice. If you are doing a four color mode plot, you will be able to choose up to four colors. Your Atari can display up to 128 different colors on screen, though only four at one time. It is therefore up to you to choose the color pen to use that will best match the actual screen color used in the picture. Though the 1020 manual says that you should place the pens in a certain order, you may of course place them in any order that you wish. In the example given under "Plotting the Picture" above, the pen order is BLACK, RED, BLUE, and GREEN.

One thing to keep in mind regarding pens for your 1020, is REMOVE THE PENS AND CAP THEM WHEN NOT IN USE. This will significantly extend the life of your pens, as they tend to dry up faster than they get used up. IT'S DEFINITELY WORTH REMOVING AND CAPPING THEM OVERNIGHT. Finally, manually drawing with each pen for a moment before inserting the pens into the 1020, helps get the ink flowing.

VISUALIZING A PLOTTER DUMP

To help make the process of visualizing how the colors in your picture will relate to the colors available on the plotter you may find the following handy. This section describes a function of the program that allows you to make the screen colors match the pen colors.

When you originally created your picture you chose colors that were appealing for screen presentation. Since the Atari 1020 plotter uses four pens, with the colors BLACK, BLUE, RED and GREEN, you will need to choose which pen should be used to draw which screen color.

With a picture on display (use CITY.PIC if you wish, or one of your own creations), press the number 1 on the keyboard. You will see that one of the colors will start flashing between Black and White, approximately once a second. You may now choose to make whatever color that was, into one of the pen colors. To choose a pen color type....

B for Black

R for Red

G for Green

 and

U for Blue (Sorry, B for Black is taken)

     Press R for example and the flashing will stop and
everything that had been the previous color will now be Red. You
may press 2, 3, or 4 in any order and then one of the color letters,
and the flashing color will be converted to that of the pen color
selected.

     You can always change your mind and reselect a color until it
looks right. Now press OPTION to return to the Function Menu
and proceed to do another Plot. You will see that the colors that
the program describes, when you are asked for a pen choice, are
ones of the primary pen colors, and if you've saved the piece of
paper with the four colored squares drawn of power-up, you'll find
it much easier to relate what's on the screen to what will appear
on paper. Once you have changed colors in the Visualizing mode,
the only way to Redisplay the original screen colors is to reload
the disk file.

DISPLAYING AND USING PLOTTED SCREENS

     The paper used on the Atari 1020 plotters is quite thin and
tends to curl. One way of attractively displaying and saving your
screen plots is to purchase 8 1/2 by 11 inch plastic page
protectors, available at most stationery supply stores. These are
designed to be inserted into three ring binders, and usually come
with black paper sheets. A few dabs of paper glue will paste your
plotter sheets on this black background and the plastic will keep
the ink from smearing.

LOADING THE WRONG TYPE OF FILE

     When attempting to load a picture file it is possible that you
may make the wrong selection. Since there are four types of files
which Screen Print can load, and four loading selections, there are
at least sixteen different error combinations that you can make. It
is up to you to take care and use the correct loading selection for
the correct type of file.

If you make an error, one of several things may happen. More than likely the file you load will appear on the screen but in jumbled form. The program may "abort" and provide an error message or there is a slight possibility that the program will "lock up" and you'll have to re-boot and start over by turning your computer on and off again with the Screen Print disk in your first or only drive.

ATTRACT MODE

During plots that take more than about nine minutes, you will find that your TV or monitor screen will start to rotate colors. This is known as the 'Attract Mode', and is a built in function of Atari computers designed to prevent a screen image from being permanentely etched into your TV tube from being left on to long. If the rotating colors are found to be annoying, simply turn off the TV or monitor until the plot is completed. When you next press any key on the keyboard, the color cycleing will stop.

Screen Print was written by
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Screen Print was produced in part using copyrighted software products of Monarch Data Systems, Cohituate, MA 01778.